STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dr. G. A. (Jim) Shirazi, Division Director

MEMORANDUM

January 11, 1984

TO: Susan C. Linner, Permit Supervisor

FROM: Thomas L. Portle, Reclamation Soils Specialist TLP

SUBJECT: Syntana-Utah Shale Oil Project
Cowboy Canyon Mine, ACT/047/021, Uintah County, Utah
Response to Division March 2, 1983 Review Letter

Waste Rock and Toxicity

In response to the Division question regarding unsuitability of various overburden and waste rock materials the applicant responds on page 82 that potential unsuitability will be determined by "chemical analysis for toxicity to plant growth." The applicant should be more specific as to what parameters will be scrutinized for and how this will be accomplished. The applicant may wish to consult with the Division on these points.

Soil Maps and Stripping

While the applicant has provided soils maps to show sample points (figure 14) these points must be identified and related to the laboratory data found in the Soil Inventory in Appendix ii.

How will the isopach map (Figure 13) be translated to field use, will areas be staked or flagged to indicate removal depths to equipment operators.

Tests Plots and Topsoil Redistribution

The applicant describes general techniques to be employed on test plots on page 62-64 and shows a plot plan on page 65. While the plots are proposed to be divided into 2 sections to test methods on both general disturbed and spent shale the design is not correlated with the use of Tosco fine shales combined with Superior coarse shales. This was the crux of concerns brought up in rule M-10(14) Soil Redistribution. The design should be revised to establish that this combination proposed for use as a subsurface to redistribute topsoil will or will not result in convective of diffusive movement of salt into the topsoil (thus decreasing its ability to support vegetation.) This should be established by soil testing adequate to measure salt and sodium levels in topsoil and any changes over time.

In addition, the applicant should acknowledge that soil redistribution should not occur when soils are too moist. This will prevent damage to soil structure.

TLP/re